

PINNAXODES GIGAS, A NEW SPECIES
OF PINNOTHERID CRAB FROM THE
GULF OF CALIFORNIA
(DECAPODA: BRACHYURA: PINNOTHERIDAE)

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Abstract.—*Pinnaxodes gigas*, new species, a large male pinnotherid from the Gulf of California is described and illustrated. Similarities with other species in the genus are discussed.

A single male specimen of a large pinnotherid was collected among sand and rocks at a depth of 20 m, off the west coast of Mexico at Morro Colorado. This species is most similar to *Pinnaxodes floridensis* Wells & Wells, 1961 and has some similarities with *P. silvestrii* Nobili, 1901 and *P. major* Ortman, 1894. The specimen described herein is distinguished based on size, abdomen, gonopodal and third maxilliped characters. The holotype is deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D.C. (USNM). The species is illustrated.

Pinnaxodes gigas, new species
Figs. 1-3

Holotype.—Male (USNM 240150), carapace length 19.55 mm; carapace width 21.95 mm; Gulf of California, 5 miles south of Estero Tastiota, Sonora, Mexico; 28°18'45"N; 111°28'30"W; 20 m, sand and rock; collected 3 Jan 1985 by A. Kerstitch.

Diagnosis.—A large heavy bodied crab. Carapace smooth, subpentagonal, convex, front produced. Legs strong, symmetrical, in decreasing length as follows: second, third, first, fourth. Chelae strong. Propodus inflated interiorly; moveable finger with large tooth at base, immovable finger with 2 small teeth, 1 distal and 1 proximal. Abdomen broad at base, narrowing to sixth segment.

Last third of sixth segment and base of telson expanded, telson narrowing to rounded tip. Third maxillipeds large, merus-ischium suture complete, outer margin nearly straight and joining broadly arched distal end, inner margin concave. Carpus broadly arched, attached at inner distal margin of merus-ischium. Propodus an elongate oval narrowing slightly distally with somewhat straight sides. Dactyl spatulate, squared distally, inserted on first third of propodus and extending just past tip of propodus. Exopod of third maxilliped with blade-like flagellum.

Description of holotype.—Carapace heavy, subpentagonal (Fig. 1). Front slightly produced, eyes just visible from dorsal view. Carapace uniformly smooth and convex, converging to steeply inclined lateral and posterolateral margins. Posterior margin narrowing somewhat, slightly convex. Edges of carapace lined with setae except for frontal region.

Buccal area broad, covered by well calcified third maxillipeds (Fig. 3A). Frontal plates and sutures dividing plates distinct. Carapace forming lateral margins of front rounded. Eyes conical. Basal segments of second antennae stout.

Third maxillipeds large (Fig. 3F). Exopod hidden by merus-ischium of endopod. Basal segment of exopod thick basally, narrowing distally; flagellum blade-like. Endopodal

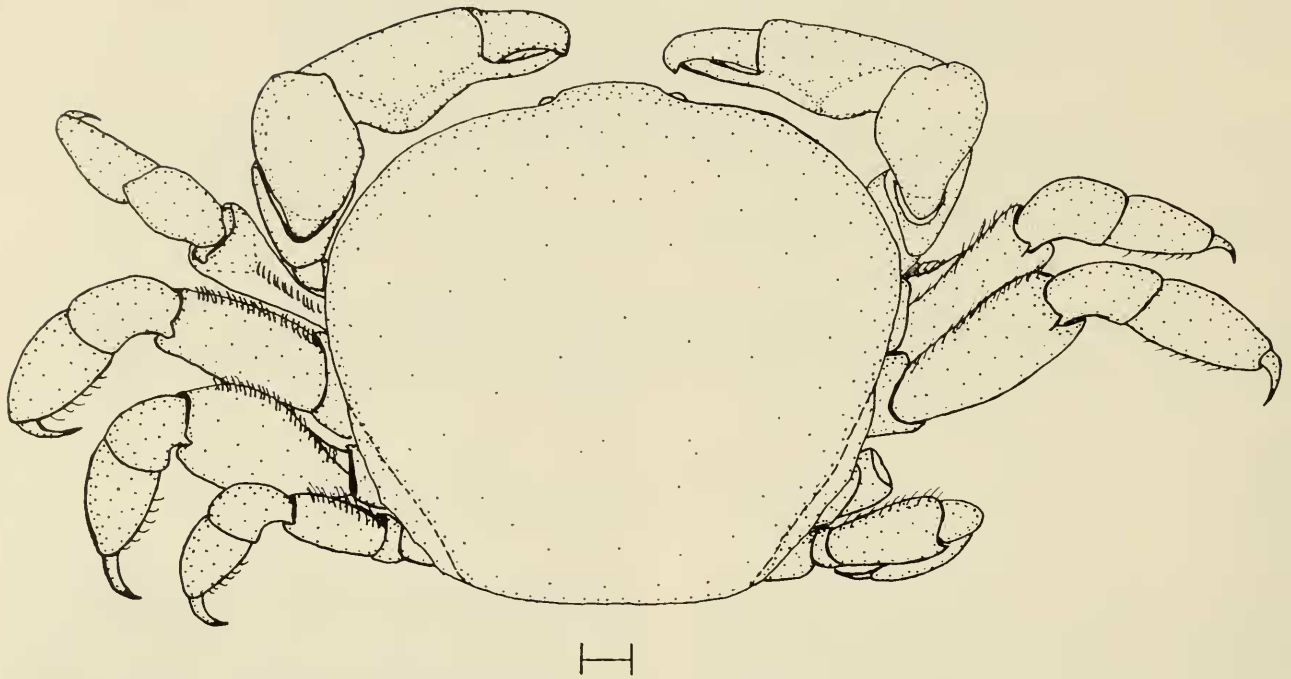


Fig. 1. *Pinnaxodes gigas*, new species. Holotype: dorsal view. Scale bar equals 2 mm.

merus-ischium suture complete. Externolateral margin nearly straight, joining broadly convex distal margin. Inner margin concave with short depression at inner corner of merus-ischium. Carpus inflated, attached to inner distal margin of merus-ischium. Propodus an elongate oval narrowing distally with somewhat straight sides. Dactyl spatulate, distal margin squared. Dactyl inserting on first third of propodus and extending just past propodal tip. Exposed surfaces of endopod smooth, distal end of merus-ischium, carpus, propodus, and dactyl with long setae.

Chelae strong, fingers short, cylindrical, curving to sharp points (Fig. 3B). Fingers gaping over most of length, crossed at tips. Moveable finger with large tooth near base. Fixed finger with 2 small teeth, 1 distal, 1 proximal just in front of large tooth of moveable finger. Small dentition at base of fixed finger (Fig. 3D). External surface of propodus broadly convex, punctated. Internal surface inflated (Fig. 3C). Inner surface of fixed finger and propodus with line of hairs (Fig. 3D). Carpi and meri greatly expanded distally, increasing the strong appearance of chelae.

Walking legs strong (Fig. 1A), decreasing in length as follows: second, third, first, fourth. Dactyls falcate with horny tips. Meri fringed anteriorly with hairs, propodi fringed posteriorly with hairs. Ventral surfaces covered with a dense pubescence.

Thoracic sternites heavily calcified and smooth except for dense pubescence surrounding abdominal depression (Fig. 2A). Each sternite with angled lateral edge produced by posterolateral extension of sternite.

Abdomen broad basally, narrowing to telson (Fig. 2B). Distal third of sixth segment and base of telson expanded. Telson narrowing to rounded tip. Last three segments and telson with dense pubescence on margins. Proximal segments and medial portion of distal segments smooth. Tip of telson with long fringe of hairs.

Gonopods nearly as long as abdomen (Fig. 3E). Tip angled at about right angle in relation to the body of gonopods. Outer margin of gonopod flattened, inner margin angular. Outer surface with fringe of long hairs, length of angled tip with long hairs.

Coloration. — *Pinnaxodes gigas* is a cream colored crab with dense red-orange mottling

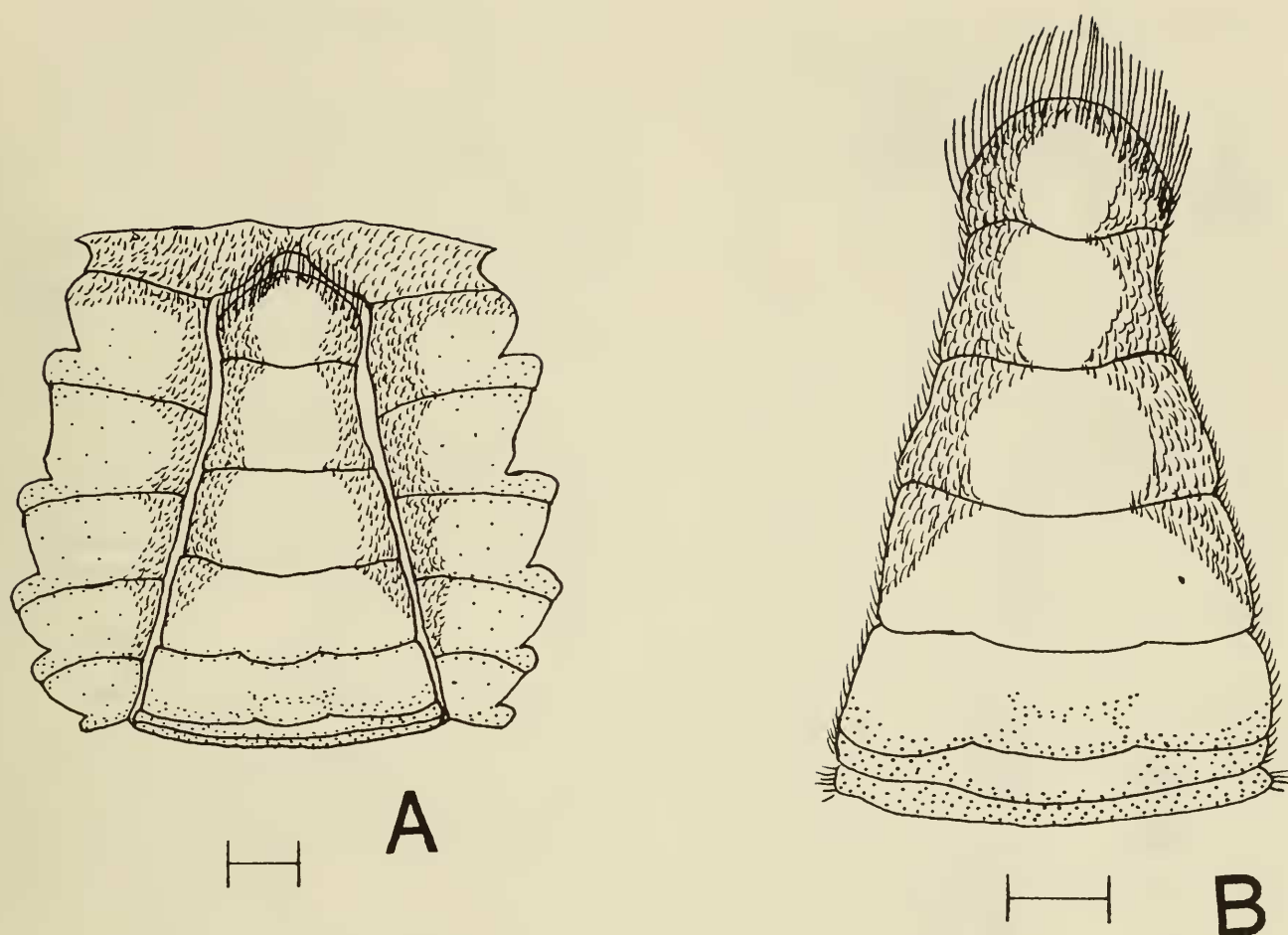


Fig. 2. *Pinnaxodes gigas*, new species. Holotype: A, sternum and abdomen, ventral view; B, male abdomen. Scale bars equal 2 mm.

in life. Mottling is found on all dorsal surfaces and dissipates when preserved, leaving only the cream colored exoskeleton.

Etymology.—The species is named for its large size; *gigas* is a noun in apposition.

Discussion.—A comparison of *Pinnaxodes gigas* to other species must be restricted to males and the description of the third maxillipeds of females where necessary. *Pinnaxodes gigas* is most similar to *P. floridensis* with additional similarities to *P. major* Ortmann, 1894 and *P. silvestrii* (Nobili, 1901). *Pinnaxodes gigas* is similar to these others in carapace shape, leg development and general shape of the chelae, and in the case of *P. floridensis*, coloration (Wells & Wells 1961). *Pinnaxodes gigas* can be differentiated from these species based on size, shape of abdomen, third maxillipeds, and in the case of males, the gonopods.

The size of this crab is large compared to other species of the genus, being approximately twice as large as other males. Male pinnotherids are usually smaller than females (Rathbun 1918). If females of *P. gigas* follow this general rule, then they would be larger than the 22 mm carapace width of the holotype. Females of the genus may be large (Garth 1957), often reaching the dimensions of *P. gigas*.

The shape of the abdomen is unique in that it narrows from its base to the sixth segment. The distal third of the sixth segment and the base of the telson are expanded. The telson then narrows to form a rounded tip. In *P. floridensis* the abdomen narrows to the sixth segment and has an abruptly inflated and rounded telson. *Pinnaxodes silvestrii* has a uniformly tapering abdomen joining a tapered and rounded tip.

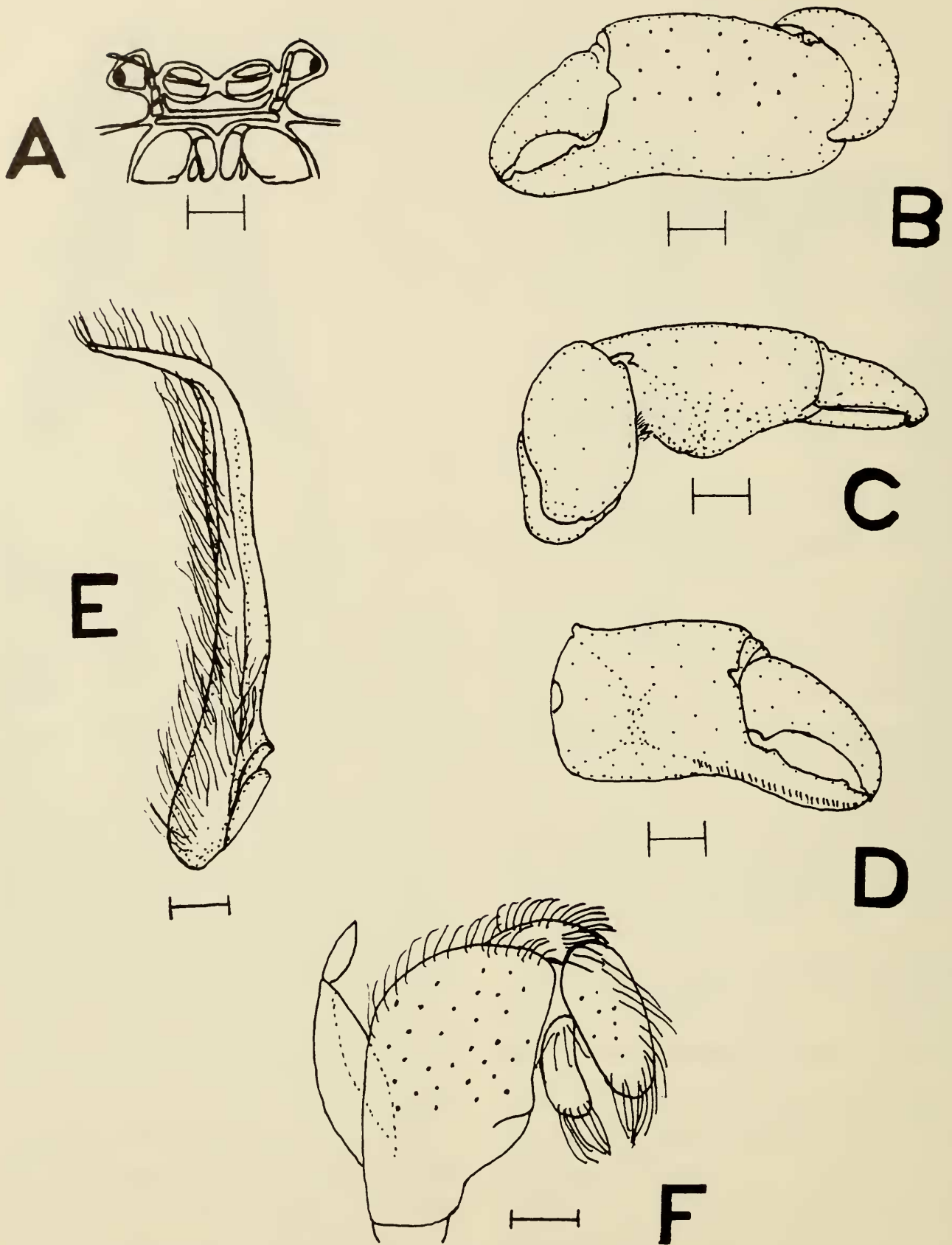


Fig. 3. *Pinnaxodes gigas*, new species. Holotype: A, front; B, left chelae, frontal view; C, left chelae, dorsal view; D, left chelae, inner view; E, right gonopod, outer view; F, right third maxilliped, outer view. Scale bars equal 2 mm, except E which equals 1 mm.

P. major has the tip of the telson flared forming a "T."

The third maxillipeds of *P. gigas* are more calcified than those of similar species. The dactyl is more angular than in the other similar species, and the propodus does not narrow toward the tip as much, being more uniform in width. The exopodal flagellum is blade-like as compared to a filiform flagellum in the other similar species.

Gonopods of *P. gigas* resemble those of *P. floridensis*, being of the same basic shape, although the gonopods of *P. gigas* are slightly more angled at the tip and the body of the gonopods are more flattened and angular.

Acknowledgments

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